

## Farmers' Disposal Pattern of Aman Paddy in a Village of Mymensing District, Bangladesh

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**Abstract** In Bangladesh, only 30% of the farmers produce surplus grains in excess of their consumption. Rest 70% is either non-producer or deficit producer who can not contribute to surplus generation even in a good harvest year. Disposal is related with the production and surplus generation of the paddy. Production directly influences the disposal pattern of paddy. Marketable and marketed surplus also depend on disposal pattern of paddy. Disposal pattern of Aman paddy in a village in Bangladesh is the major concern of the present study. Consumption as percent of total acquisition of paddy was higher in small farms and lowest in large farms. Stock and kind payment protects produce to enter the market and thus marketed surplus is reduced. Higher disposal occurred at farm gate in post harvest season in small farms. Among the heads of disposal pattern, sale and consumption were the major heads of disposal pattern. The study also shows that small households are forced to enter the market at harvest when prices are low to meet their need for cash to repay loans and buy household goods. Many of these households repurchase later in the season when household stocks are exhausted, despite the fact that by then prices have risen by more than the implicit cost of storage.

**Key words:** Bangladesh, disposal pattern, marketable surplus, marketed surplus

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### INTRODUCTION

In the rice economy, households vary between surplus, self-sufficient and deficit. Surplus households are those who have surpluses from production over and above their subsistence and labor payment requirements: these do not enter the market as buyers. Self-sufficient farm can exactly balance their output, need of seed, feed and wastage deductions, and requirements. These households do not enter as buyer or sellers. Deficit households do not grow enough rice to meet all they need. They have to make net purchases. Poorest among deficit households are landless laborers, urban industrial workers and urban slam dwellers.

The subsistence nature of rice farming results in low yield and meager marketable surplus. After retaining a major portion of the paddy for consumption, seed and payment of dues, farmers sell only a small surpluses at the farm yards and in the local Haats to the marketing functionaries like Kutial, Pharias, and Beparis<sup>4</sup> in the Post harvest period. Quasem (1987) found in his study that small, medium, and large farms sold 26.1%, 30.3%, and 25.9% of their total production respectively. He reported that small, medium, and

large farms sold 50.1, 41.3 and 21.7% of their total sales immediately after harvest.

In Bangladesh, only 30 percent of the farmers produce surplus grains in excess of their consumption. Rest 70 percent is either non-producer or deficit producer who can not contribute to surplus generation even in a good harvest year. (Ahmad and Bernard 1989). Disposal pattern of paddy is deeply related with the production and surplus generation of the paddy. Disposal pattern of Aman paddy is the major concern of the present study because Aman paddy contributed 52% to the total annual rice production in Bangladesh. (BBS 1991). The main objective of the study is to examine the disposal pattern of Aman paddy in a selected area to know the problems relating to farmers' disposal pattern of paddy so that suggestions can be made to improve the level of marketable surplus of paddy which plays a vital role in the development of a nation's economy.

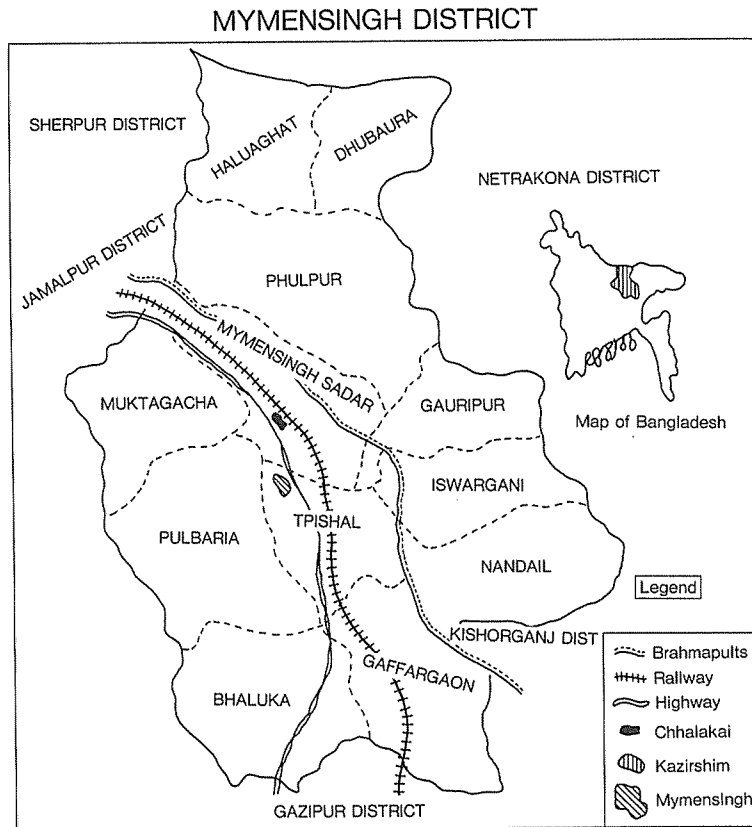
### CONCEPTION OF SOME KEY TERMS

*Farmers' disposal pattern of paddy:* Disposal of paddy refers to the distribution of paddy for different purpose viz., consumption, sale seedkept, kind payment etc. Disposal of commodities is done in different ways and forms. With the passage of time, the distribution process of commodities is becoming more complex, due to appearance of the concept money exchange system and surplus production. Now a days disposal pattern is very important in farm environment for making proper farm business guidelines to ensure optimum price of product and facilities under subsistence farming.

*Marketed and Marketable Surplus of Paddy:* The term "marketable surplus" is misleading since farmers usually sell some quantity of the paddy produced one or two months after the harvest, leaving the rest for home consumption, but they often have to buy back paddy or rice in the lean seasons. Small cultivators, due to cash requirements, tend to sell more paddy than they can spare and during the lean seasons are forced to buy it back. Macro economic studies on the marketable surplus of foodgrains, such as that of D. Narain and U. Patnaik, did not distinguish between the marketed surplus and the marketable surplus, although they used the term "marketable surplus". It is Nadkarni who paid attention to this behavior of buying back foodgrains among small cultivators. Taking this behavior of small cultivators into consideration, it is convenient to distinguish between the marketed surplus and the marketable surplus. Here, the marketed surplus is defined as the quantity actually sold after the harvest and the marketable surplus, as the quantity produced minus their home requirement for seed, food and wage payment etc.

### DESCRIPTION OF THE STUDY AREA

The village Kazirshimla is belong to the union of Boilor under the Mymenshing district. Mymenshing has long been a rice surplus districts and has supplied paddy and rice to the capital Dhaka. The village Kazirshimla is progressive in the sense that the people are more exposed to communication facilities (as it is situated on the side of Dhaka Mymenshing high way), have electricity, primary and secondary school within the village. Moreover, it is an old project village of Bangladesh Agricultural university, because since 1966 to till date various projects has been working in this village. The main aim of the



study is to investigate or determine disposal pattern i.e. the flow of Aman paddy from household through different channels. There are many factors influence the disposal of Aman paddy. In this study four variables were (farm size, family size, off-farm income, farm income) brought under consideration as independent variables which affect the farmers' disposal of Aman paddy. Disposal of Aman paddy is the dependent variable in this study. Consumption, sale, kind payment, labor payment, seedkept, loan payment, wastage or farm loss, distress sale, barter payment, transfer payment etc. are considered as the successive heads of disposal pattern.

### INDEPENDENT VARIABLES

*Farm Size:* Farm size have been measured in terms of actual operating land of a respondent head in his authority. It has been computed with the help of the following formula

$$\text{Farm size} = A_1 + A_2 + A_3 - A_4 + A_5$$

$A_1$  = Self cultivated own land

$A_2$  = Cultivated area taken from others as rented in

$A_3$  = Cultivated area given to others as rented out

$A_4$  = Cultivated area given to to others as mortgaged in

$A_5$  = Cultivated area taken from others as mortgaged in

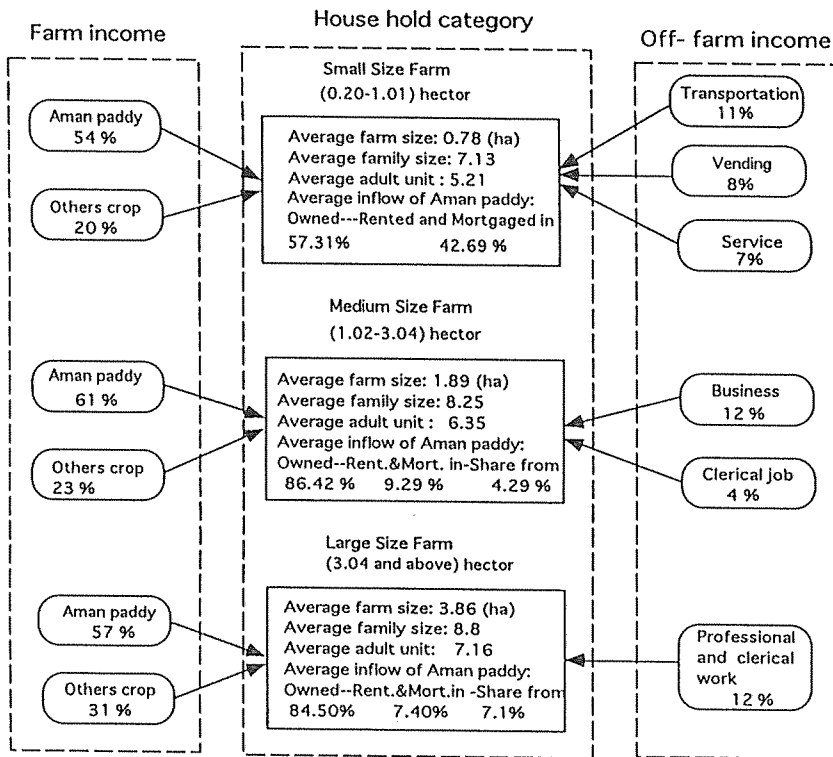


Fig. 1.2 Independent Variables of Disposal Pattern of Aman Paddy in Study Area

Since the farmers were of different sizes, were categorized in the following manner:

Category	Farm size
Small	0.20 to 1 hector
Medium	1.01 to 3 hector
Large	3.05 to above

In the study area, average size of small, medium, and large farms were 0.78, 1.89, 3.86 hector respectively. Average farm size of small, medium and large farms in Bangladesh is 0.86, 1.66 and 4.78 hector respectively (BBS 1990)

**Family size (As adult equivalent unit):** Family size has great importance in determining disposal of paddy, especially in determining consumption of paddy of a producer. Thus, family size through consumption puts an impact upon the marketable surplus which in turn reflects through consumption pattern to the disposal pattern. In this study, average family size of small, medium and large farms were obtained 7.13, 8.25 and 8.9 persons respectively. With a view to measuring the family consumption more accurately family size (adult unit) has been measured according to the following conversion rate: adult male=1, adult female=0.8 and child=0.5 (0 to 12 years). In the study area, average family size (adult

unit) of small, medium, and large farms were of 5.21, 6.35, 7.16 adult unit respectively.

*Off-farm Income:* Off-farm income is an important factor in the disposal pattern. It has an indirect effect on marketable and marketed surplus. Off-farm income protects distress or harvest sale and enhances off season or commercial sale, thus increasing income and henceforth increases investment in production whose ultimate manifestation is to increase marketable and marketed surplus. Here off-farm income means income from service and business mainly. Sources of non farm income for farmers in the study village are limited. Some members of farm households are found working under different government and semi government organizations and some others were found working as laborers. There are some grocers' shops, tea stalls, tailoring shops, cycle rickshaw repairing shops etc. in the study area. Average off-farm income of farm family under different categories is presented in the fig. 1.2.

*Farm income:* Of the agricultural crops paddy and jute are the most important ones in the study area. The farmers also grow wheat, potato and other vegetables. In the study area, Aman paddy alone contributed 54, 61, 57 percent to the total income of small, medium and large farms respectively.

### DISPOSAL PATTERN OF PADDY IN STUDY AREA

Different types of disposal pattern of paddy have been observed in Bangladesh. These are family consumption, marketable surplus, loan payment of Mahajan, kind payment, donation, gift, commodity exchange etc. A model of disposal pattern of paddy in the study area is presented below

*Total Acquisition of Paddy:* The total quantity of paddy available for consumption, sale and other disposal of a household is not only the net production receipt of the year but also includes receipts from other sources. In addition to net production receipt, a household may receive paddy through kind receipt, purchasing and beginning stock. Therefore, the total acquisition of paddy = net production receipt + beginning stock + purchase + kind receipt.

*Net Production receipts:* In this study, production means, production from own land under own operation, production of mortgaged in/out land. Total production of a farm household obtain in this way has been termed here as 'net production receipts.' In the study area, percentage of per household (small, medium, and large farm) net production receipts of Aman paddy was 69.71, 76.60, and 76.46 percent of the total acquisition of Aman paddy.

*Beginning Stock:* Due to uncertainty of market and to fulfill future needs, farm households store a certain portion of their net production receipts. In the beginning of a crop year this stored paddy is known as 'beginning stock' and at the end of a crop year this is known as 'closing stock'. In the study area, percentage of beginning stock of small, medium, and large farms was 2.35, 5.42, and 21.17 percent of the total acquisition of paddy respectively. The lowest one (2.35%) occurred in the case of small farms, which indicates

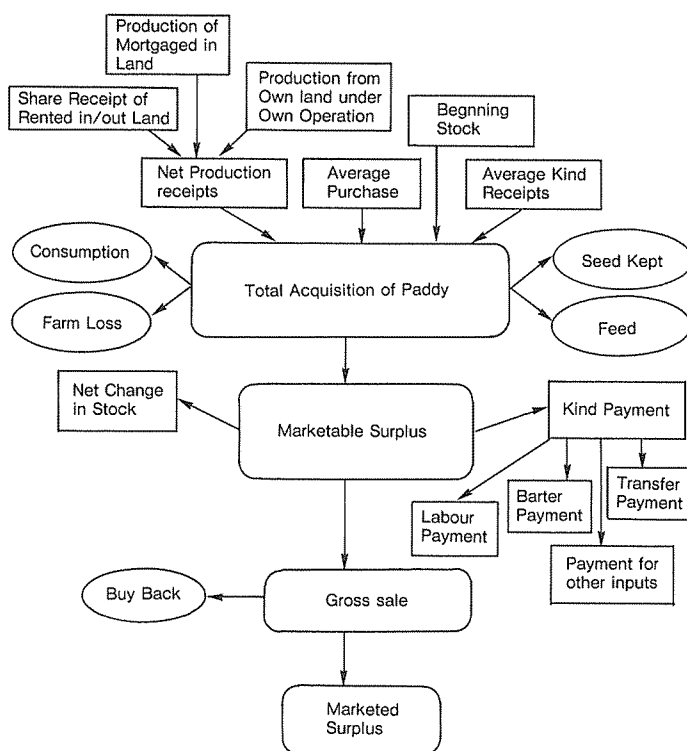


Fig. 1.3 A Model of Disposal Pattern of Aman Paddy in Study Area

that the stock of paddy of small farms at the beginning of the year was very negligible.

*Average Purchase:* In the study area, average purchase of small, medium, large were 17.33, 11.33, and 1.28 percent respectively. The highest average purchase occurred in the case of small farm because they did not fulfill their requirements of their own production. They had to purchase paddy for their home consumption, seed and other purposes. The lowest average purchase occurred in the case of large farm. It indicates that large farms was almost sufficient that they had no need to distress sale.

*Average Kind Receipts:* kind receipts include recovery of loan in kind, receipts of grain in exchange for other goods and services etc. In the study area, average kind receipts (except land rent) of small, medium and large farms was 10.61, 6.65 and 1.09 percent of the total acquisition of paddy respectively. The highest kind receipts in small farm indicates that they had to sell more and repurchase more than others. The lowest kind receipts in large farms indicates that large farms had an insignificant amount of distress sale and repurchase was a very negligible amount of paddy.

*Consumption:* Family consumption or farm consumption is the main head of farmers' disposal of paddy. As a result of subsistence farming in the country, the largest portion of the total rice has to be retained for home consumption. Therefore, quantity retained for

home consumption is the main head of disposal of paddy. In the study area, Per farm or average consumption was estimated 42.56, 21.9, 14.41 percent of the total acquisition of paddy for the small, medium and large farm respectively. The highest consumption occurred in the case of small farms and the lowest consumption occurred in the the case of large farm.

*Seed Kept:* The seed kept of small, medium and large farms in the study area were 7.14, 7.39 and 8.88 percent respectively. The large farms retained higher amount of paddy of seed purposes followed by medium and small farms.

*Farm Loss:* Wastage of paddy or on-farm loss of paddy was very negligible amount of disposed of paddy. On farm loss of small, medium, and large farms was 3.18, 2.29 and 3.15 percent respectively. The total acquisition of paddy for small farms was lower than medium and large farms. But the loss of small farms was comparatively higher followed by medium and large farms. It is found that one fourth of small farms however, have no storage facilities. They faced problems of storage.

*Feed:* The animal feed kept of small, medium and large farms were 0.15, 0.35, and 0.48 percent of the total acquisition of paddy respectively.

*Marketable surplus:* In a semi subsistence economy, besides marketed surplus, there are other components of produce which have potentiality to be sold in the market. These components are net payments in kind and net change in stock. Payments in kind includes labor payment in kind, land rent, payments for other farm inputs, barter for household daily necessities and some transfer payments. Land rent is a contractual payment in kind in the short run and is not considered as the component of marketable surplus. In this study, land rent is treated as contractual. However, payments in kind for other purposes are treated as non contractual.

The other important component of marketable surplus is net change in stock (closing stock minus beginning stock). Due to uncertainty of market and to fulfill future needs, farm households store a certain portion of their net production receipts. In the beginning of a crop year this stored paddy is known as beginning stock and at the end of a crop year this is known as closing stock. If the net change in stock is positive it causes to increase marketable surplus and if it is negative it causes to decrease marketable surplus. Besides marketed surplus, these components of marketable surplus have the potentiality to be marketed. But due to market uncertainty and subsistence nature of the economy those components are not marketed. Average marketable surplus in the study area was estimated 62.70 (46.97, 68.07, 73.08 percent small, medium and large farm respectively) percent of total acquisition of paddy. Out of marketable surplus 74 percent was marketed surplus. Net payment in kind (including labor payment in kind plus net other payment) occupies the second position (22.37 percent). The rest 3.63 percent was net change in stock. Thus out of total marketable surplus 74 percent was marketed and the rest 26 percent had potentiality to be marketed. So, if there would not be any payment or receipt in kind and no uncer-

tainty in market, then marketed and marketable surplus would be equal.

*Kind Payment:* In semi subsistence economy, payments in kind includes labor payment, land rent, payments for other farm inputs, barter for household daily necessities and some transfer payments. In the short run land rent can be treated as contractual in an economy with a renting arrangement like Bangladesh Leasing system. However, payments in kind for other purposes are treated as non contractual. In Bangladesh situation it is reasonable to assume that barter payments excluding labor payment in kind are made for household necessities and payments in kind for services of ferry-men and social organizations like Youth club and Mosques. Transfer payments are gift to individuals and social organizations. In the study area, out of marketable surplus, the labor payments of small, medium and large farms were 5.67, 12.18 and 15.89 percent respectively. And the other payment in kind (except land rent and labor payment) of small, medium and large farms were 9.99, 10.84, and 12.54 percent respectively.

*Net Change in Stock:* The other important component of marketable surplus is net change in stock (closing stock minus beginning stock). Due to uncertainty of market and to fulfill future needs, farm households store a certain portion of their net production receipts. In beginning of a crop year this paddy is known as beginning stock and at the end of a crop year this is known as closing stock. In the study area, out of marketable surplus, average net change in stock were 5.12, 3.8, 2.1 percent respectively. Net change in stock was higher for small and medium farms in comparison with large farms. Small farms due to their lower cash feel more uncertainty of future food security and hoard more than those of large farms.

*Sale:* November-December are the months of harvest sale of Aman paddy. More or less all the categories of farms generally sold larger volume of paddy during harvesting period. Harvest sale varied from farm to farm. Harvest sale depends on off-farm income. Harvest sale of small, medium, and large farms were 63.58, 58.69 and 37.09 percent respectively. (Table 1). June-October are the period of off season sale of Aman paddy. Off season sale which are related to the availability of paddy and also related to the off-farm income of the respective farms. Per farm off season sale of Aman paddy of small, medium, and large farms was 13.58, 20.03, and 23.86 percent respectively. (Table 1) Percentage of off-season sale of Aman paddy was the lowest in case of small farms. Large farm occupied the

Table 1 Harvest and Off-season sale as a proportion of total sale of Aman paddy by farm size

Category of farm	Harvest sale as % of total sale	Off-season sales as % total sale
Small	63.58	13.58
Medium	58.69	20.03
Large	37.09	23.86
All	47.86	20.85

Source: Field survey



highest percentage of off-season sale.

*Marketed surplus:* In a semi-subsistence economy, it is reasonable to argue that the quantity which is sold in the market does not necessarily mean surplus. Farmers can market their produce more than their marketable quantity for cash need for the time and repurchase later on when necessary in the same crop year. Hence, their all marketed quantity can not be treated as marketed surplus. Rather, quantity remains after subtracting the repurchase or buy-back can termed as 'marketed surplus'. Thus marketed surplus equals gross sale minus repurchase. The quantity which is repurchased later on is called distress sale. Thus average Marketed surplus in the study area was estimated 46.39 (34.75, 50.37, 54.04 percent small, medium, large farm respectively) percent of the total marketable surplus. In the study area the repurchase was negligible in the large farms about all (99.86 percent) of their gross sale was marketed surplus. Thus for the large farms gross sale and marketed surplus are almost equal but for the small and medium farms, gross sale and marketed surplus were not equal due to distress sale. In the study area 88.54 and 94.32 percent of the gross sale of small and medium farms were marketed surplus.

### CONCLUSION

In Bangladesh, only 30% of the farmers produce surplus grains in excess of their consumption. Rest 70% is either non-producer or deficit producer who cannot contribute to surplus generation even in a good harvest year. Disposal is related with the production and surplus generation of the paddy. Production directly influences the disposal pattern of paddy. Marketed and marketable surplus also depend on disposal pattern of paddy. Disposal pattern of Aman paddy is the main concern of the present study. In the study, survey method has been used in the present study for relevant data collection. The households selected for the study area 40, 30 and 25 from small, medium and large farms respectively. Stratified random sampling technique was used in selecting samples with a view to comparing the disposal pattern of different farm categories. The study period covered the Aman season in 1994-95. The period between November to April is considered as Aman season. Disposal pattern of Aman paddy was the dependent variable which contained consumption, sale, kind payments and seed kept of Aman paddy. Farm size, family size (adult unit), off farm income were considered as independent variables. Farm size has been measured as prescribed by Bangladesh Bureau of statistics with slight modification.

The study shows that on an average the family of small, medium and large farms constituted 7.33, 8.2 and 8.9 persons respectively Family size (adult unit) of small, medium and large farms was 5.41, 6.37 and 7.16 respectively. Average farm size of small, medium and large farms was 0.78, 1.89 and 3.96 hectares, respectively. Per farm average annual income constituted of farm income and off farm income. Out of total annual income, 84% came from farm income of which 55% contributed by Aman paddy alone and the rest 16% came from off farm income. Average acquisition of Aman paddy comprised of average net production receipts, beginning stock, average purchase, and average kind receipts except land rent.

From the study, following conclusions can be done:

(i) Marketable surplus is considerably higher than gross sale and marketed surplus and thus estimates of gross sale and marketed surplus can not be used for policy formulation of marketable surplus.

(ii) Stock and kind payment protects produce to enter the market and thus marketed surplus is reduced

(iii) Of farm income was higher in small farms followed by medium and large farm

(iv) Consumption as percent of total acquisition of paddy was higher in small farms and lowest in large farm

(v) Higher disposal occurred at farm gate in post harvest season in small farms.

(vi) Among the heads of disposal pattern, sale and consumption were the major head of disposal patterns

On the basis of the above conclusion, the following recommendations may be put forward.

Disposal of Aman paddy increased by increasing off-farm income of the farmers. Preference should be given to sell paddy at the secondary market than to sale it at the farm gate or primary market. Harvest sale of Aman paddy should be reduced with a view to getting higher prices of paddy by selling in the off-season.

Consumption of Aman paddy should be reduced in order to get higher marketable surplus. Thus change of food habit and proper family planning measure can ensure the positive impact of income on marketable and marketed surplus of paddy

### NOTES

3. *Local Hatts and Bazaars:* In Bangladesh rural hats and bazaars are centers of rural economic activities where village people sell their surplus products and buy other necessities of life. In subsistence farming, farmers produce most of the food required for their families and whatever is left over they sell in the local hats and bazaars to buy other necessities of life. So in rural hats and bazaars most of the things that are bought and sold can be categorized as necessities of life.

4. *Bepari, Faria, Kutial:* These traders purchase paddy at farm and primary market levels, regrade the paddy. They transport their purchases to the next market level or a mill. Normally, they do their own their transports. They get along by renting transports, typically cycle vans, bullock cart, boats. Bigger ones typically use rented trucks for transporting their purchases. A very small number own godowns, usually small multipurpose structures, at a primary market, or in their village. They are responsible for 70 to 80% of purchases from farmers, and for a substantial proportion of the movements to mills.

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## Bangladesh, Maimensingh地方の村における 農家自家経済通外部へのアマン稲作の放出パターン

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Bangladeshでは、全農家のわずか30%でしか自家消費以上の余剰穀物を生産できない。残りの70%の農家は、豊作の年でさえも、余剰をだせない自給的農家かあるいは非農家である。米の放出は生産と余剰に関係している。生産は米の放出形態に直接影響を与える。市場向けや市場に出された余剰米も、米の処分形態に関わっている Bangladeshの村でアマン作の放出形態は、現在の研究と深い関連がある。米の総収量に対する消費割合は、小規模農家では高く、大規模農家では小さくなっている。在庫や物納は、市場に出すための生産を防ぎ、市場に出る余剰を減少させます。小規模農家では、収穫後に地方市場において多くの米を放出します。放出形態の大部分は売買や消費が主流である。この研究においても、小さな世帯は、ローンの返済や生活用品を買うためのお金を必要とするため、価格が低い収穫期に市場に入れざるをえないということを示しています。これらの世帯の多くは、保管料以上に上った価格であるにもかかわらず、在庫がなくなったときには再び買っているのである。

キーワード: Bangladesh, 放出パターン, 売却可能の余剰, 売却済の余剰